HIGH ACCURACY RECEIVER FORWARD AND REFLECTED PATH TEST INJECTION CIRCUIT

ABSTRACT OF THE DISCLOSURE

There is disclosed an injection circuit for measuring radio frequency (RF) signals in an RF receiver for use in measuring the impedance match of a receive antenna and for use in calibrating receiver gain, wherein an advantageous embodiment of the injection circuit comprises: 1) a circulator coupled to the receive antenna; 2) a directional coupler coupled to the circulator; 3) an injection source coupled to the circulator and to the directional coupler, wherein the injection source is capable of injecting a test RF signal into either the circulator or the directional coupler; and 4) a terminating switch for selectively enabling or disabling the transfer of a test RF signal from the injection source to either the circulator or the directional coupler. The circulator has a reverse isolation of at least 20 dB that significantly increases the accuracy of the measurements of the RF signals compared with the accuracy that may be achieved by prior art methods. The present invention obtains the received signal strength indicator (RSSI) measurements at any instantaneous temperature and operating channel and determines voltage standing wave ratio (VSWR) measurements.